

§ 54.01-18 Plan approval.

(a) Manufacturers intending to fabricate pressure vessels, heat exchangers, evaporators, and similar appurtenances, covered by the regulations in this part shall submit detailed plans in accordance with subpart 50.20 of this subchapter.

(b) The following information shall be submitted:

(1) Calculations for all pressure containment components including the maximum allowable working pressure, the hydrostatic or pneumatic test pressure, and the intended safety device setting.

(2) Joint design and methods of attachment of all pressure containment components.

(3) Foundations and supports (design and attachment).

(4) Pertinent calculations for pressure vessel foundations and/or supports.

(5) A bill of material meeting the requirements of section VIII of the ASME Code, as modified by this part.

(6) A diagrammatic arrangement drawing of the assembled unit indicating location of internal and external components.

§ 54.01-25 Miscellaneous pressure components (modifies UG-11).

(a) Pressure components for pressure vessels shall be as required by UG-11 of the ASME Code except as noted otherwise in this section.

(b) All pressure components conforming to an accepted ANSI (American National Standards Institute) Standard referred to in an adopted code, specification or standard or in this subchapter shall also be marked in accordance with MSS (Manufacturers' Standardization Society) Standard SP-25.

[CGFR 68-82, 33 FR 18828, Dec. 18, 1968, as amended by CGFR 69-127, 35 FR 9977, June 17, 1970]

§ 54.01-30 Loadings (modifies UG-22).

(a) The loadings for pressure vessels shall be as required by UG-22 of the ASME Code except as noted otherwise in this section.

(b) In evaluating loadings for certain pressure vessel applications, the Commandant may require consideration of

the following loads in addition to those listed in UG-22 of the ASME Code:

(1) Loading imposed by vessel's attitude in roll, list, pitch and trim.

(2) Dynamic forces due to ship motions.

§ 54.01-35 Corrosion (modifies UG- 25).

(a) Vessels or portions of vessels subject to corrosion shall be as required by UG-25 of the ASME Code except as noted otherwise in this section.

(b) The pressure portions of pressure vessels shall:

(1) Normally have a corrosion allowance of one-sixth of the calculated thickness, or one-sixteenth inch, whichever is smaller, added to the calculated thickness as determined by the applicable design formula.

(2) Be specifically evaluated in cases where unusually corrosive cargoes will be involved, for the possible increase of this corrosion allowance.

(3) Have no additional thickness required when acceptable corrosion resistant materials are used.

(4) Not normally need additional thickness allowance when the effective stress (either S or SE depending on the design formula used) is 80 percent or less of the allowable stress listed in section VIII of the ASME Code for calculating thickness.

(c) Telltale holes shall not be permitted in pressure vessels containing dangerous fluids, such as acid, poison, corrosives, etc.

(d) Exemption from these corrosion allowance requirements will be granted by the Commandant in those cases where:

(1) The contents of the pressure vessel is judged to be sufficiently non-corrosive; and,

(2) Where the external surface is also protected from corrosion. A suitable vapor barrier is adequate protection, while paint or other thin coatings exposed to weather or mechanical damage are not acceptable.

NOTE: No applied linings except as provided in Part UCL of the ASME Code shall be acceptable.

[CGFR 68-82, 33 FR 18828, Dec. 18, 1968, as amended by CGFR 72-59R, 37 FR 6189, Mar. 25, 1972]